

A Case of Lobectomy for Bronchiectasis

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THE patient was a man of twenty-three years of age, a poultry assistant by occupation, and he was first admitted to the Forster Green Hospital in 1931. At that time he had a history of cough, a small amount of sputum and repeated hæmoptysis, the largest hæmorrhage being about a pint. Tubercle bacilli were not present in the sputum, and there was no evidence suggestive of tuberculosis on any of the X-ray pictures taken. The physical signs were basal, fine crepitations at both bases, broncho-vesicular breathing, and increased vocal resonance at the left base. A provisional diagnosis of bronchiectasis was made, but no lipiodol test was done. As the patient had no further hæmoptysis, he was discharged from hospital in five weeks.

He returned in October, 1933, considerably worse. The cough and sputum had increased, and there had been several large hæmoptyses. The last hæmorrhage was said to have exceeded forty ounces, and after it he was admitted to Newry District Hospital in a very grave condition. Tubercle bacilli were still absent from the sputum, and the blood sedimentation rate was normal. The physical signs were more indefinite than three years previously, owing to the recent hæmorrhage, but fine crepitations were present at the left base. Lipiodol tests showed a marked bronchiectasis of the left lower lobe and no evidence of bronchiectasis in the left upper lobe or in the right lung field. The patient consented to have a lobectomy, and the risks of the operation were explained to him. He said he would rather die under the operation than have another hæmorrhage like the last one.

As a preliminary to the lobectomy, an artificial pneumothorax was done on the left side on the 2nd March, 1934, and following this a most unusual complication arose. It was feared that the artificial pneumothorax might start the hæmoptysis again, as is liable to happen in the hæmorrhagic type of case. Instead of this he developed a hæmorrhagic effusion in the left pleural cavity, which required aspiration at once before it became absorbed. On 17th April he was transferred to Dr. Boyd Campbell's medical unit in the Royal Victoria Hospital, where a further series of photographs were taken after lipiodol injections.

Bronchoscopy on 25th April, 1934, showed that there was no stenosis nor tuberculosis present. Purulent fluid was observed in the left main bronchus.

Operation, 28th April, 1934—one-stage lobectomy. Anæsthesia : gas and oxygen at a slight positive pressure, given by Dr. Stafford Geddes with a McKesson machine.

The chest was opened by a long incision in the seventh intercostal space. On incising the parietal pleura, it was found that the visceral and parietal pleuræ were adherent, but not too densely, and it was necessary to free the lung before the intercostal incision could be completed in its full length. A small piece of the seventh rib was resected near the transverse process of the vertebra to allow of

wider separation of ribs. The ribs were then widely separated and held apart by Tuffier's rib-spreader. Fairly extensive adhesions were found between the lower lobe and diaphragm, and were separated with some difficulty. In separating the anterior surface of the lobe from upper lobe, a very vascular connection was encountered which required several ligatures.

The pulmonary ligament was clamped and divided, three ligatures being required, and when this was completed it was found that the lobe was reasonably well pedunculated. A Roberts-Nelson tourniquet was threaded over the lobe and tightened on the pedicle as high as possible. A second tourniquet was applied distally about one and a half inches away, and tightened. The lower lobe was isolated by gauze packs moistened in weak dettol solution, the packs covering also the wound edges. The pedicle was then cut through between the tourniquets, leaving a stump from which one or two projecting bronchi were trimmed off with curved scissors. The pedicle was sutured with two rows of No. 1 chromic catgut (twenty-day) continuous suture, using for the most part a short, straight, round-bodied needle and a needle holder. No bleeding occurred on releasing the tourniquet, and another continuous suture, picking up the lung tissue at the periphery, completed the pedicle suture, which was then buried in the under-surface of the upper lobe by two sutures.

The phrenic nerve, although looked for, could not be seen in the chest cavity, so was not interrupted by crushing.

It was now seen that on slightly increasing the pressure of the anæsthetic gases that the upper lobe expanded so as almost to fill up the space formerly occupied by the lower lobe. (There were no adhesions fixing the upper lobe to chest wall.)

A drainage tube was inserted through a small incision, with short rib resection of tenth rib, in mid-axillary line. It was held in position by a stitch through the diaphragm tied over it.

The wound in the chest wall was closed by—

1. Approximation of the ribs by interrupted pericostal chromic gut sutures maintaining the approximation, and these reinforced by further stitches through the intercostals.
2. Suture of divided muscles by continuous suture.
3. Skin sutures.

On his return to the ward the condition was fair. He was put into a moderate Fowler position, the drainage tube was connected to a further length of rubber tubing having at its distal end a long piece of glass tubing dipping below the surface of one-in-forty carbolic solution in a bottle placed on the floor.

1,000 c.c. of glucose-saline solution were given intravenously.

The temperature was normal for the first two days, and then was somewhat irregularly elevated, but never above 100° F., until the twelfth day, when it reached 101° F. It became normal again on the eighteenth day.

The pleura was explored by needle on the fourteenth day, as it was thought he might have a small empyema or fistula. Only a very little purulent fluid was found. He never showed evidence of having a bronchial fistula.

Professor Young examined the removed lobe, and reported that histologically the epithelial lining of the bronchiectatic cavities was largely desquamated and that the submucosa or wall was the seat of subacute inflammatory changes. The lung showed irregular areas of dense fibrosis. The arteries exhibited well-marked arteritis, evidently the effects of a chronic inflammatory lesion.

There was no evidence of tuberculosis.

This man wrote recently that he was feeling very well and anxious to obtain work.

So far as I know, this is the first successful case of lobectomy for bronchiectasis recorded in Ireland.

Apart from lobectomy, the treatment of bronchiectasis is only palliative and the results are far from satisfactory. Artificial pneumothorax is useless, except in children, and even then it requires to be kept up for an indefinite period. Bronchoscopic lavage and medication gives great relief in the type of bronchiectasis associated with much purulent sputum, but would be inapplicable to the treatment of the hæmorrhagic type.

The Treatment of Varicose Veins

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To deal fully in a short space with the treatment of varicose veins is difficult. I intend to consider only the injection method. Ten years ago the pendulum swung so far in favour of injection for all cases, that there is now the natural swing back to the old method for certain patients. In time a stable position will be reached, when it will be realized that certain veins, e.g., those in the calf, etc., are suitable; whereas, of those on the thigh, injection will be successful for some, and for those unsuitable ligature of a vein will be the only safe method.

Before dealing with the technique of injection, one or two facts must be considered. The first of these is the circulation in the limbs. The blood reaches the part through the arteries, having been pumped there by the heart's action. The return flow is carried to the heart by the veins, and of these there are two main types—(a) the superficial, lying subcutaneously; and (b) the deep, centrally placed, surrounded by muscles.

The force causing the return flow is complicated, and probably is a combination of several factors:—

(1) The heart's action extending through arteries and capillaries to the veins—the so-called *vis a tergo*. This, although doubted by some, must exist, as can be seen by the steady flow from the distal end of a completely severed vein.

(2) The aspiration or suction exerted by the heart and lungs—*vis a fronte*. The negative pressure produced in the thorax with the descent of the diaphragm—rather like that produced in a syringe by withdrawing the piston—is easily understood.

(3) Gravity is of great importance, but can only affect the dependent parts when recumbent or with the legs raised.